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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/624,020
Filing Date: July 21, 2003
Appellant(s): SEUL ET AL.

Eric P. Mirabel
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 13, 2006 appealing from the Office action mailed October 10, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal involves claims 47 (instead of 747), 49, 50 and 55.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is deficient. 37 CFR 41.37(c)(1)(v) requires the summary of claimed subject matter to include: (1) a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number, and to the drawing, if any, by reference characters and (2) for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters. The brief is deficient because the claims do not involve or recite **encoded** particles and that the analytes are identified by decoding those particles associated with bound analytes as discussed in the summary of the claimed subject matter by Appellants.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Rava et al. (US 5,874,219) – February 23, 1999.

Shivashankar et al. (US 6,139,831) – October 31, 2000.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 47, 49, 50 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rava et al. (US 5,874,219) in view of Shivashankar et al. (US 6,139,831).

Rava teaches a chip plate comprising a plurality of test wells (planar substrate) , each test well (hydrophilic region) having a biological chip having a molecular probe array. (see col. 1, lines 62-65). The test wells are separated by a hydrophobic region. (see col. 4, lines 24-30; fig. 3; col. 8, lines 35-46). Regarding claim 49, test wells comprise hydrophilic regions because they can accommodate aqueous sample, and are within the perimeter of the indentations of the planar surface of the substrate (plate), said indentations (wells) being surrounded by the hydrophobic regions. Regarding claim 55, Rava teaches that the chip plate is made of silicon or modified silicon. (see col. 4, lines 10-12; col. 9, lines 41-45).

However, Rava fails to teach that the chip has an array of particles deposited thereon, wherein a biological reagent is bound to the particles and that different types of particles having different biological reagent bound thereto.

Shivashankar teaches grafting an array of particles coated with a molecule such as a biomolecule, on to localized positions of semiconductor substrate (biochip). (see col. 18, lines 35-41). Shivashanka also teaches different types of particles (first and second colloidal particles) coated with different molecules (first and second DNA sequences). (see col. 18, lines 3-30).

It would have been obvious to one of ordinary skills in the art to immobilize particles, having biomolecules or different types of particles having different biomolecules immobilized thereon, as taught by Shivashanka, onto the chip/substrate as taught by Rava since both teach coating biochip with biomolecules because particles enable separation of specific biomolecules within a microfluidic chamber (wells) as taught by Shivashanka (see col. 18, lines 40-41). Particles such as gold colloidal are also used as light scattering labels for detection purpose.

(10) Response to Argument

Applicants argue that Rava does not teach a planar substrate having several discrete hydrophilic regions separated by a hydrophobic region but rather Rava teaches test well as hydrophilic regions and a hydrophobic region as a "raised physical barrier" on the surface of the array. The present invention claims "the hydrophilic regions are separated from other hydrophilic regions by a hydrophobic region which is part of the planar surface. Rava is directed to forming a test well, there is no suggestion of having

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the hydrophobic region as part of the planar surface of the substrate. The present invention does not claim that the hydrophobic regions are **raised** with respect to the substrate surface. Applicants further argue that Rava fails to teach several discrete hydrophilic regions which are part of the planar surface of the substrate.

The present specification describes in figure 25 a, a microplate comprising of test wells having disposed thereon a microarray chip. Claim 49 also recites that the hydrophilic regions are within the perimeter of indentations in the planar surface of the substrate, said indentations being surrounded by the hydrophobic regions. Rava teaches a microtiter plate comprising of test wells having disposed thereon a microarray chip (see figures 3 and 7). The walls (which are part of the planar substrate or well plate) of the test wells are scored with waxes, tapes or other hydrophobic materials (see col. 8, lines 35-41) to separate the arrays. The walls of the wells are part of the planar substrate or well plate. Since Rava teaches that the materials for forming the well plate/wafer or the substrate can be silicon or SiO₂ (see col. 9, lines 40-45; claim 41), and Applicants argue that Silicon is hydrophilic, the substrate or well plate of Rava is also hydrophilic and the regions/well bottoms that hold the chip array are hydrophilic and these discrete regions are separated by the hydrophobic walls of the wells. The bottoms of the well are part of the planar surface and hydrophilic. Regardless whether the hydrophobic regions are raised or not, they are still part of the well plate or the planar substrate.

Regarding Shivashankar et al, Applicants argue that Shivashankar fails to teach the claimed elements missing from Rava, thus rejection under 103 should be reversed.

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This argument is moot in view of the discussion above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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Patent Examiner
March 13, 2007

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